APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/823,363	03/30/2001	Tse-Hua Lan	US010131 CPLP	7625

24737	7,590	07/05/2005

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EXAMINER
DO, CHAT C

ART UNIT	PAPER NUMBER
2193	

DATE MAILED: 07/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

		Application No.	Applicant(s)	
Office Action Summary		09/823,363	LAN ET AL.	
		Examiner	Art Unit	
		Chat C. Do	2193	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>29 April 2005 and 03 April 2005</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>2-7 and 9-19</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>2-6, 9-13, 15-19</u> is/are rejected.

7)☒ Claim(s) <u>7 and 14</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

1.   This communication is responsive to Amendment filed 04/03/2005.

·2.   Claims 2-7 and 9-19 are pending in this application. Claims 17-18 are independent

claims.   In Amendment, claims 1 and 8 are cancelled and claims 17-19 are added. This Office

Action is made non-final after a RCE filed 04/29/2005.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the

basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

4.   Claims 2-6, 9-13, and 15-19 are rejected under 35 U.S.C. 102(a) as being anticipated by

Lengwehasatit (U.S. 6,167,092).

        Re claim 17, Lengwehasatit discloses Figures 2-5 a method of decoding a video

signal (e.g. abstract and Figure 5), the method comprising: receiving an array of Discrete

Coefficient Transform (DCT) coefficients (e.g. 504 and 505 in Figure 5, col. 6 lines 5-

10), DCT coefficient array having been obtained by performing the DCT algorithm on a

macro-block (MB) (e.g. Figure 2 and col. 4 lines 54-59 wherein the macro-block's size is

8x8 as seen in Figure 2, col. 1 lines 25-30), macro-block being an array of pixels in a

video frame (e.g. col. 2 lines 22-26), wherein DCT coefficient array corresponds to MB

(e.g. col. 1 lines 39-43); determining at least one of the horizontal complexity and the

vertical complexity of MB by determining the value of a predetermined one of the

coefficients (e.g. col. 6 lines 5-21 wherein any DCT coefficient in the array is at least one

of the horizontal complexity and the vertical complexity and the algorithm is checking

for the last non-zero DCT coefficient position by checking the value of the coefficient),

wherein predetermined coefficient represents the highest of at least one of horizontal

frequency and vertical frequency (e.g. Figure 3 as an example, col. 6 lines 5-21 since the

last non-zero coefficient position is arbitrary, the position of last non-zero coefficient

would occur at the bottom row as highest horizontal frequency or the right most column

as highest vertical frequency) and performing inverse DCT (IDCT) coding (e.g. col. 6

lines 11-21, col. 2 lines 25-31) on a sub-array of coefficients within the DCT coefficient

array in order to reconstruct macro-block (e.g. col. 1 lines 35-45), wherein the size and

position of sub-array depends (e.g. col. 6 lines 10-21) on the determined value of the

predetermine one of the coefficients having the highest of at least one of horizontal

frequency and vertical frequency (e.g. Figure 3 as an example, col. 6 lines 5-21 since the

last non-zero coefficient position is arbitrary, the position of last non-zero coefficient

would occur at the bottom row as highest horizontal frequency or the right most column

as highest vertical frequency).

Re claim 2, Lengwehasatit further discloses Figures 2-5 video signal is video data

encoded according to the MPEG algorithm (e.g. col. 1 line 23 as MPEG-1).

Re claim 3, Lengwehasatit further discloses Figures 2-5 video signal is video data

encoded according to the MPEG2 algorithm (e.g. col. 1 line 23 as MPEG-2).

Re claim 4, Lengwehasatit further discloses Figures 2-5 the predetermined

coefficient represents the highest horizontal frequency in the MB regardless of vertical

frequency (e.g. Figure 3 as an example, col. 6 lines 5-21 since the last non-zero

coefficient position is arbitrary, the position of last non-zero coefficient would occur at

any position at the bottom row as highest horizontal frequency [36th, 37th, 49th, 50th, 58th,

59th, 63th, 64th]).

Re claim 5, Lengwehasatit further discloses Figures 2-5 the predetermined

coefficient represents the highest vertical frequency in the MB regardless of horizontal

frequency (e.g. Figure 3 as an example, col. 6 lines 5-21 since the last non-zero

coefficient position is arbitrary, the position of last non-zero coefficient would occur at

any position at the right most column as highest vertical frequency [29th, 43th, 44th, 54th,

55th, 61th, 62th, 64th]).

Re claim 6, Lengwehasatit further discloses Figures 2-5 the predetermined

coefficient represents the highest horizontal frequency and the highest vertical frequency

in the MB (e.g. Figure 3 as an example, col. 6 lines 5-21 since the last non-zero

coefficient position is arbitrary, the position of last non-zero coefficient would occur at

any position like the last position 64th of 8x8 macro-block [64th]).

Re claim 9, it is a system claim of claim 2. Thus, claim 9 is also rejected under

the same rationale as cited in the rejection of rejected claim 2.

Re claim 10, it is a system claim of claim 3. Thus, claim 10 is also rejected under

the same rationale as cited in the rejection of rejected claim 3.

Re claim 11, it is a system claim of claim 4. Thus, claim 11 is also rejected under the same rationale as cited in the rejection of rejected claim 4.

Re claim 12, it is a system claim of claim 5. Thus, claim 12 is also rejected under the same rationale as cited in the rejection of rejected claim 5.

Re claim 13, it is a system claim of claim 6. Thus, claim 13 is also rejected under the same rationale as cited in the rejection of rejected claim 6.

Re claim 15, Lengwehasatit further discloses Figures 2-5 the predetermined coefficient represents the lowest vertical frequency in the MB (e.g. Figure 3 as an example, col. 6 lines 5-21 since the last non-zero coefficient position is arbitrary, the position of last non-zero coefficient would occur at any position at left most column as lowest vertical frequency [1st, 3rd, 4th, 10th, 11th, 21st, 22nd, 36th]).

Re claim 16, it is a system claim of claim 15. Thus, claim 16 is also rejected under the same rationale as cited in the rejection of rejected claim 15.

Re claim 18, it is a system claim of claim 17. Thus, claim 18 is also rejected under the same rationale as cited in the rejection of rejected claim 17.

Re claim 19, Lengwehasatit further discloses Figures 2-5 the processing means is implemented in at least one of hardware firmware, and software (e.g. col. 2 lines 23-44).

Allowable Subject Matter

5.   Claims 7 and 14 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

6.   Applicant's arguments filed 04/03/2005 have been fully considered but they are not

persuasive even for new claims 17-19.

   a.   The applicant argues in pages 9-10 generally for claims 1-16 as following: First,

the cited reference by Lengwehasatit requires the entire array be scanned to determine the

location of the last non-zero coefficient whereas the claimed invention does not; Second,

the cited reference uses the location of the last non-zero coefficient to determine which

pruned IDCT algorithm to use instead of determining the value of a particular

predetermined coefficient as claimed; Third, the cited reference does not teach or suggest

having the size and/or position of a subset within the received DCT coefficient array

which will be IDCT coded being selected by determining the value of a particular

predetermined coefficient.

   The examiner respectfully addresses each argument separately as below:

   First argument, applicant's argument that the references fail to show

certain features of applicant's invention, it is noted that the features upon which

applicant relies (i.e., claims 17-18 do not require the entire array to be scanned

wherein the cited reference requires the entire array be scanned to determine the

location of the last non-zero coefficient) are not recited in the rejected claim(s).

Although the claims are interpreted in light of the specification, limitations from

the specification are not read into the claims. See *In re Van Geuns*, 988

F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). Clearly seen from the claim

language, it does not require only a single predetermined coefficient to be

scanned.

Second argument, the cited reference clearly requires to the last non-zero

coefficient by checking or determining the value of that coefficient in order to

distinguish whether or not the coefficient is non-zero coefficient. This method

clearly needs to determine the value of coefficient, which cites in the claimed

invention.

Third argument, paragraph in column 3 lines 3-7 clearly determined the

corresponding set of pruned IDCTs for a particular value of the last non-zero or

zero coefficient. Once a set of pruned IDCTs is determined, the size and position

of subset (less than and within 8x8) will be IDCT.

Conclusion

7.   The prior art made of record and not relied upon is considered pertinent to applicant's

disclosure.

b.   U.S. Patent No. 6,400,680 to Fisch discloses a data transformation of the inverse-

Fourier type.

c.   U.S. Patent No. 6,587,590 to Pan discloses a method and system for computing

8x8 DCT/IDCT and a VLSI implementation.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Chat C. Do whose telephone number is (571) 272-3721. The

examiner can normally be reached on M => F from 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Chaki Kakali can be reached on (571) 272-3719. The fax phone number for the

organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent

Application Information Retrieval (PAIR) system. Status information for published applications

may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

applications is available through Private PAIR only. For more information about the PAIR

system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR

system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

                                        Chat C. Do
                                        Examiner
                                        Art Unit 2193

June 28, 2005